



Climate change impact on the olive pollen season in Mediterranean areas of Italy: Air quality in late spring from an allergenic point of view

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Abstract:

Recent studies have shown that there are many effects of climate change on aeroallergens, and thus on allergic diseases in humans. In the Mediterranean region, despite the importance of the olive tree for production, there is high allergenicity of olive pollen and related risks to human health. Aerobiological sampling techniques can be used to analyse the pollinosis phenomenon through determination of mean daily pollen concentrations per cubic metre of air. The present study was carried out from 1999 to 2008 in 16 olive-growing areas in Italy, to update the information on the pollinosis characteristics of *Olea europaea* in the study areas. The analysis of the average flowering season over the study period highlights a temporal scaling of pollen in the atmosphere that depends on the different climatic characteristics. This is mainly dependent on temperature, and in part, determined by latitude. Generally, the levels of *O. europaea* pollen in the atmosphere are higher from mid-April to the end of June, with the period of greatest risk to human health due to this olive pollen in this area currently limited primarily to the last 10 days of May. However, the pollen season can move, depending on the climate scenario considered, and data here can be used to determine potential time shifts in pollinosis that might cause more precocious asthma and allergy problems. The allergy season for this type of pollen might be significantly precocious in future decades (20-30 days earlier in the year), which will impact on the severity and duration of allergies attributable to olive tree pollen.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

Special Report on Emissions Scenarios (SRES) Scenario: SRES A2, SRES B1

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

Climate Change and Human Health Literature Portal



audience to whom the resource is directed

Policymaker

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Italy

Health Co-Benefit/Co–Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Asthma, Upper Respiratory Allergy

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Medium-Term (10-50 years)